OPTIMISATION OF OLEANOLIC ACID EXTRACTION FROM 'POKOK BUNGA TAHI AYAM' (*LANTANA CAMARA*) ROOTS BY METHANOL-ETHYL ACETATE SOLVENT USING RESRONSE SURFACE METHODOLOGY

RASIMAH MAHAT

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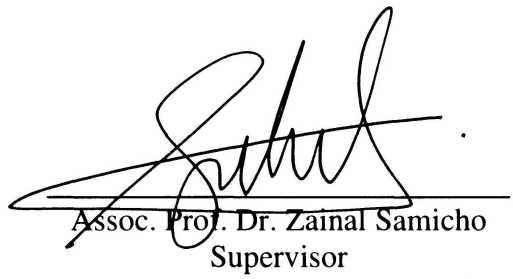
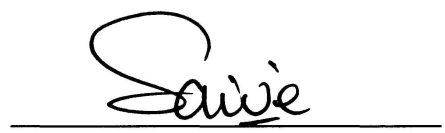
This Final Year Report entitled " **Optimisation of Oleanolic Acid Extraction From *Lantana camara* (Pokok Bunga Tahi Ayam) Roots by Methanol-Ethyl Acetate Solvent Using Response Surface Methodology"** was submitted by Rasimah Mahat, in partial fulfillment of the requirements for the Degree of Bachelor of Science (Hons.) Applied Science, in the Faculty of Applied Sciences, and was approved by



Assoc. Prof. Dr. Zainal Samicho
Supervisor
B. SC. (Hons.) Food Science and Technology
Faculty of Applied Sciences
Universiti Teknologi MARA
40450 Shah Alam
Selangor

Ms. Sabrina binti M. Yahya
Project Coordinator
B.Sc. (Hons.) Applied Chemistry
Faculty of Applied Sciences
Universiti Teknologi MARA
40450 Shah Alam
Selangor



Dr. Yusairie bin Mohd
Head of Programme
B. Sc. (Hons) Applied Chemistry
Faculty of Applied Sciences
Universiti Teknology MARA
40450 Shah Alam
Selangor

Date : 28 NOV 2008

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TABLE OF CONTENTS

		Page
ACKNOWLEDGEMENTS		iii
TABLE OF CONTENTS		iv
LIST OF TABLES		vi
LIST OF FIGURES		vii
LIST OF ABBREVIATION		viii
ABSTRACT		ix
ABSTRAK		x
CHAPTER 1 INTRODUCTION		
1.1	Background	1
1.2	Significant of study	1
1.3	Objectives of study	2
CHAPTER 2 LITERATURE REVIEW		
2.1	*Lantana camara*	3
	2.1.1 Classification	3
	2.1.2 Discription	3
	2.1.3 Bioactive principle in *Lantana camara*	5
2.2	Oleanolic acid	6
	2.2.1 Molecular formula	6
	2.2.2 The IUPAC name of oleanolic acid	6
	2.2.3 Molecular structure	6
	2.2.4 Physical properties	7
	2.2.5 Chemical compositions	7
	2.2.6 Pharmacological properties	9
	2.2.6.1 Hepatoprotective effects	10
	2.2.6.2 Anti-inflammatory effects	11
	2.2.6.3 Anti-tumor activity	12
	2.2.6.4 Anti-hyperlipidermic effects	13
	2.2.6.5 Anti-ulcers effects	13
2.3	Extraction of oleanolic acid	14
CHAPTER 3 METHODOLOGY		
3.1	Material	15
	3.1.1 Raw material	15
	3.1.2 Reagents	15
	3.1.3 Apparatus	16

ABSTRACT

OPTIMISATION OF OLEANOLIC ACID EXTRACTION FROM 'POKOK BUNGA TAHI AYAM' (*LANTANA CAMARA*) ROOTS BY USING RESPONSE SURFACE METHODOLOGY (RSM)

Lantana camara is an ornamental plant used in tradition medicine for the treatment of various diseases. The roots of *L. camara* is a rich of oleanolic acid which has shown anti-inflammatory, hepatoprotective, antitumor, antioxidant and anti-hyperliperdemic activity. Optimisation of various extraction parameters using response surface methodology (RSM) was performed to asses maximum yield of oleanolic acid from *L.camara* roots. MINITAB software version 14 was used to identify the significant effect of various extraction parameters such as concentration of solvent-solid ratio (mL:g), extraction temperature and extraction time. Among the three variables tested, concentration of solvent-solid ratio (mL:g) and extraction temperature were found to have significant effect on oleanolic acid extraction. Optimum level of the significant variables were determined by using central composite design. The optimum condition for extraction of oleanolic acid was found at 30 mL/g of concentration of solvent-solid ratio, 60ºC of extraction temperature and 30 minutesof extraction time. At optimum extraction parameters, the optimum yield of oleanolic acid obtained experimentally (1.36609 %) was found to be very close to its predicted value determined by (1.2915%) MINITAB software version 14.